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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,782	12/12/2001	Stephen Memory	665.00947	9531

7590

09/13/2005

WOOD, PHILLIPS, VAN SANTEN, CLARK & MORTIMER  
SUITE 3800  
500 WEST MADISON STREET  
CHICAGO, IL 60661

EXAMINER
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LEO, LEONARD R

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 09/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/020,782

Applicant(s)

MEMORY ET AL.

Examiner

Leonard R. Leo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 8, 13, 20 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8, 13, 20 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

In response to the Appeal Brief filed on July 13, 2005, the following action on the merits is as follows. Claims 8, 13-20 and 23-25 are pending, and claims 14-19 and 24-25 remain withdrawn from consideration.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 13, 20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dienhart et al (US and DE, collectively) in view of Haussmann.

Dienhart et al discloses all the claimed limitations except a plurality of alternating tabs and elongated separations in the fin. Although, Dienhart (DE) is the priority document for Dienhart (US), Figures 4 and 6 vary in perspective. Dienhart (DE) is believed to correctly depict the common serpentine fin 8 between the serially connected tube rows. The office action will refer to the documents collectively.

Haussmann discloses a heat exchanger comprising a pair of legs 14, 16 defining a serial fluid pass, and a common fin 30 traversing the legs having a plurality of alternating tabs 52 and elongated separations 36 for the purpose of thermally decoupling the legs. Figure 8 of Haussmann discloses both removal and nonremoval of material to form the slots 36.

Since Dienhart et al and Haussmann are both from the same field of endeavor and/or analogous art, the purpose disclosed by Haussmann would have been recognized in the pertinent art of Dienhart et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Dienhart et al a plurality of alternating tabs and elongated separations for the purpose of thermally decoupling the legs as recognized by Haussmann.

Regarding claim 13, Dienhart et al (US)(column 9, lines 15-23) discloses the device is employed in a CO<sub>2</sub> air conditioning system, i.e. transcritical. As evidenced by Lorentzen et al (column 1, lines 29-33), basic air conditioning systems comprise an evaporator, compressor and a gas cooler (i.e. condenser).

Regarding claim 20, air conditioners are similar in structure to heat pumps, with the exception of a reversing valve to provide a heating mode. As evidenced by Lorentzen et al (column 1, lines 7-12), air conditioners and heat pumps are synonymous with one another, each having vapor compression cycle devices operating under transcritical conditions.

Claims 8 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binello in view of Haussmann.

Binello discloses all the claimed limitations except a heat flow interrupter.

Haussmann discloses a heat exchanger comprising a pair of legs 14, 16 defining a serial fluid pass, and a common fin 30 traversing the legs having a plurality of alternating tabs 52 and elongated separations 36 for the purpose of thermally decoupling the legs. Figure 8 of Haussmann discloses both removal and nonremoval of material to form the slots 36.

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Since Binello and Haussmann are both from the same field of endeavor and/or analogous art, the purpose disclosed by Haussmann would have been recognized in the pertinent art of Binello.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Binello a heat flow interrupter for the purpose of thermally decoupling the legs as recognized by Haussmann.

Claims 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binello in view of Lorentzen et al.

Binello discloses all the claimed limitations except a transcritical refrigeration system.

Lorentzen et al (column 1, lines 29-33) discloses basic air conditioning systems comprise an evaporator, compressor and a gas cooler (i.e. condenser), wherein the system operates in a transcritical condition for the purpose of achieving optimal performance.

Since Binello and Lorentzen et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Lorentzen et al would have been recognized in the pertinent art of Binello.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ Binello in a transcritical refrigeration system for the purpose of achieving optimal performance as recognized by Lorentzen et al.

Regarding claim 20, Lorentzen et al (column 1, lines 7-12) discloses air conditioners and heat pumps are synonymous with one another, each having vapor compression cycle devices operating under transcritical conditions.

*Response to Arguments*

The rejections in view of Hoshino et al (5,531,268) is withdrawn in view of the newly applied prior art. The secondary references of Martins et al (6,502,305) and Stoyhoff et al have been replaced by Haussmann. However, Martins et al (6,502,305) and Stoyhoff et al clearly disclose and provide evidence that a serpentine fin with a plurality of slots and tabs formed without the removal of fin material is well known in the art.

Applicant's arguments filed with the Appeal brief have been considered but are moot in view of the new ground(s) of rejection.

Although applicants have not traversed the Examiner's position that transcritical air conditioners are well known in that art with respect to claims 13 and 20, Lorentzen et al has been applied.

No further comments are deemed necessary at this time.

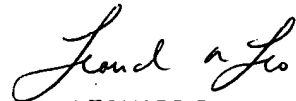
*Conclusion*

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on (571) 272-4930. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



LEONARD R. LEO  
PRIMARY EXAMINER  
ART UNIT 3753

September 8, 2005